

REMARKS

Although the previous Office action closed prosecution on the merits, the current Office action reopened prosecution because of finding a new reference. Claims 1-12 are pending in the application. The Office has now examined claims 1-12 and rejected same, as described below. With this paper, claims 1, 6 and 11 are changed, and claims 3-4 and 8-9 are canceled. Thus, the application now includes claims 1-2, 5-7, and 10-12.

At section 6 of the Office action, all the independent claims of the application, namely claims 1, 6 and 11, are rejected under 35 USC §102 as being unpatentable over U.S. Pat. No. 6,577,271 to Gronemeyer.

With this paper, method claim 1 is changed to incorporate the limitations of method claim 4 (and claim 3, from which it depends, but not claim 2, from which claim 3 depends), and apparatus and system claims 6 and 11, respectively, are correspondingly changed to incorporate the limitations of apparatus claim 9, which provides limitations corresponding to those of method claim 4.

Applicant respectfully submits that the assertions of the Office action notwithstanding, Gronemeyer does not in fact teach the limitations recited in claims 4 and 9.

Claims 4 and 9 recite that a non-coherent integration is performed involving multiplying each element of a matrix of correlation results provided using a coherent integration of a first signal fragment, by the complex conjugate of a corresponding element for an immediately preceding signal fragment. This is not the same as multiplying a correlation (complex value) with its complex conjugate. The recited process is explained at page 13, ll. 8-12, as follows:

Multiplying each sample after the coherent processing, given by eq. (2), by the complex conjugate of the nearest neighbor sample occurring earlier in time, provides,

$$z(n_1) \equiv y(n_1)y^*(n_1-1) = \tilde{a}_{n_1}\tilde{a}_{n_1+1}e^{2\pi j\Delta f_f n_1 N_c \Delta t} e^{-2\pi j\Delta f_f (n_1-1) N_c \Delta t} = \tilde{a}_{n_1}\tilde{a}_{n_1+1}e^{2\pi j\Delta f_f N_c \Delta t} \quad (3)$$

which compensates for the time (code epoch) dependence n_1 .

Thus, a phasor indicating the result of a correlation is not multiplied by its complex conjugate, but is instead multiplied by the complex conjugate of the phasor for an *immediately preceding signal* fragment.

The Office relies on Gronemeyer at col. 11, ll. 15-25 for disclosing the limitation recited in claim 4, but at the cited location Gronemeyer teaches only obtaining the magnitude of a phasor (i.e. multiplying the phasor by its complex conjugate and taking the square root of the resulting real number value). Gronemeyer never discloses multiplying an element by the complex conjugate of a corresponding element for an *immediately preceding signal* fragment.

In view of the changes to claims 1, 6 and 11, applicant respectfully requests that the rejections under 35 USC §102 of claims 1, 6 and 11 be withdrawn, and that the rejections of the other claims remaining in the application also be withdrawn, in view of their dependencies and because their rejections are based on the rejection of one or another of claims 1, 6 and 11.


It is believed that all of the claims remaining in the application are now in condition for allowance and their passage to issue is earnestly solicited.

Respectfully submitted,

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